

**REMARKS**

This Amendment is filed in response to the non-final Office Action dated August 1, 2008, and is respectfully submitted to be fully responsive to the rejections raised therein. Accordingly, favorable reconsideration on the merits and allowance are respectfully requested.

In the present Amendment, claim 1 has been amended to further recite that the commingled yarn is a filament yarn and that the polyester filaments having a low boiling water shrinkage produced by the heat-relaxation treatment of partially oriented polyester filaments at an overfeed of 0.5 to 5.0%. Support the amendment to claim 1 can be found, e.g., in the specification on page 23, lines 5 to 11 and from page 23 line 35 to page 24, line 2.

No new matter has been added. Entry of the Amendment is respectfully submitted to be proper. Upon entry of the Amendment, claims 1-20 will be all the claims pending in the application.

**The Rejections**

Claims 1-2, 5-12, 16-17 and 19-20 were rejected under 35 U.S.C. § 013(a) as being unpatentable over U.S. Patent 4,965,919 (Fujita) in view of U.S. Patent 6,593,447 (Yamamoto) and further in view of U.S. Patent 4,254,108 (Kowallik).

Claims 1-2 and 5-6 were provisionally rejected on the grounds of non-statutory obviousness-type double patenting rejection, as assertedly being unpatentable over claims 1 - 20 of co-pending Application No. 10/541,574, and claims 1 - 15 of co-pending Application No. 10/535,419.

Claims 1-2 and 5-6 are rejected on the grounds of non-statutory obviousness-type double patenting as being assertedly unpatentable over claims 1-2 of U.S. Patent 7,371,701 in view of U.S. Patent 6,818,282.

### **Traversal**

#### **I. Response to the Rejection Under 35 U.S.C. § 103(a)**

Applicants traverse in view of the amendment to claim 1 and further in view of the following remarks.

Claim 1, as amended, is directed to a Polyester different-contraction commingled filament yarn comprising two different types of filaments with different boiling water shrinkage ratios, comprising polyester polymer as the principal component individually,

wherein

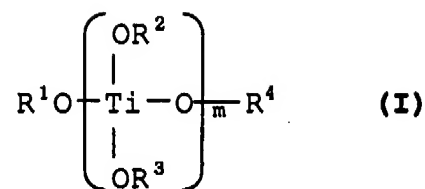
the polyester polymer is one produced by polycondensation of an aromatic dicarboxylate ester in the presence of a catalyst,

the catalyst comprises at least one ingredient selected from among mixture (1) and reaction product (2) below,

the mixture (1) is a mixture of the following components (A) and (B):

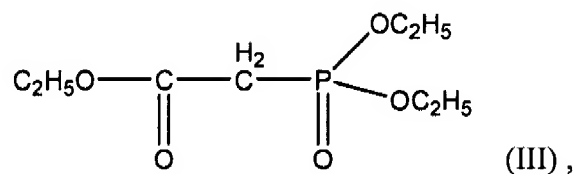
(A) a titanium compound component comprising at least one compound selected from the group consisting of:

(b) reaction products of titanium alkoxides of general formula (I)



wherein  $\text{R}^1$ ,  $\text{R}^2$ ,  $\text{R}^3$  and  $\text{R}^4$  each independently represent one species selected from alkyl groups having 1 to 20 carbon atoms and phenyl group,  $m$  represents an integer of 1-4, and when  $m$  is an integer of 2, 3 or 4, the two, three or four  $\text{R}^2$  and  $\text{R}^3$  groups may be the same or different; with trimellitic acid or anhydride thereof, and

(B) a phosphorous compound component comprising triethyl phosphonoacetate represented by the formula (III):



the catalyst mixture (1) is used with a mixing ratio such that the ratio (%) MTi of the millimoles of titanium element in the titanium compound component (A) with respect to the number of moles of the aromatic dicarboxylate ester and the ratio (%) Mp of the millimoles of phosphorus element in the phosphorus compound component (B) with respect to the number of moles of the aromatic dicarboxylate ester satisfy the following expressions (i) and (ii):

$$1 \leq \text{Mp}/\text{MTi} \leq 15 \quad (\text{i})$$

$$10 \leq \text{Mp} + \text{MTi} \leq 100 \quad (\text{ii}),$$

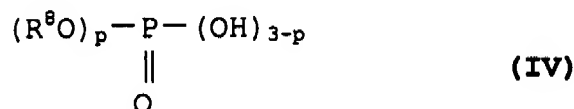
and the reaction product (2) is the reaction product of the following components (C) and (D):

(C) a titanium compound component comprising at least one compound selected from the group consisting of:

(c) titanium alkoxides represented by formula (I) above and

(d) reaction products of titanium alkoxides of general formula (I) above with trimellitic acid or anhydride thereof, and

(D) a phosphorus compound component comprising at least one phosphorus compound represented by the following general formula (IV):



wherein  $R^8$  represents alkyl group having 1 to 20 carbon atoms or aryl group having 6 to 20 carbon atoms, and p represents an integer of 1 or 2,

and the polyester filaments having a low boiling water shrinkage are ones produced by heat-relaxing partially oriented polyester filaments at an overfeed of 0.5 to 5.0%.

The polyester different-contraction commingled yarn of the present invention is constituted by the following features.

Feature (A): The commingled filament yarn comprises polyester filaments having a high boiling water shrinkage (high shrinkage filaments) and polyester filaments having a low boiling water shrinkage filaments (low shrinkage filaments).

Feature (B): Each of the high and low shrinkage filaments comprises a polyester polymer produced by polycondensation of an aromatic dicarboxylate ester in the presence of a catalyst as defined in the amended claim 1.

Feature (C.): The low shrinkage filaments are ones produced from partially oriented polyester filaments by heat relaxing at an overfeed of 0.5 to 5.0%.

The combination of features (A) and (B) with feature (C) enables the resultant polyester commingled filament yarn to exhibit a high resistance to fluff-formation on the yarn, an enhanced dyeability in deep color, a good color tone and excellent moldability.

The combination of features (A) and (B) with feature (C) is new and highly inventive over the cited prior art.

Applicant respectfully requests the Examiner's consideration of the following cited prior art. Applicant respectfully submits that following discussion of the cited art is not an attempt to argue against the references individually. The cited prior art references alone or combined do not and cannot teach or suggest the presently claimed invention, nor do the references provide motivation or otherwise provide an apparent reason to modify the invention taught in the primary reference to achieve the claimed invention.

U.S. Patent 4,965,919 (Fujita)

Fujita discloses a yarn consisting of two types of filaments each having a different shrinkage than the other. In the mixed filament yarn of Fujita, the low shrinkage filaments are produced, in view of column 6, lines 20 to 55, of Fujita, by drawing undrawn filaments,

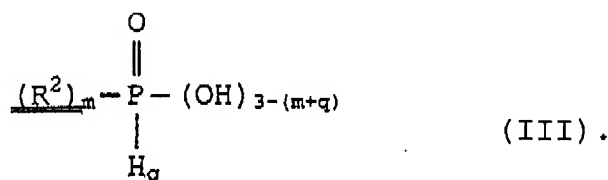
produced by a melt-spinning procedure at a winding-up speed of 2000 to 4000 m/minute, at a temperature of  $T_g$  to  $T_g + 20^\circ\text{C}$  so as to obtain elongation at break of 30 to 45% and  $\Delta n$  of 0.10 to 0.14 after stretching; and heat-relaxing the drawn filaments at an overfeeding rate of 20 to 60%.

The low shrinkage filaments A do not meet with feature (C) of the present invention. Namely, the low shrinkage filaments for the present invention are produced from partially drawn filaments by heat-relaxing at an overfeeding rate of 0.5 to 5.0%. Therefore, the low shrinkage filaments A are definitely different from and thus cannot teach or suggest the specific low shrinkage filaments for the present invention as claimed in the amended claim 1. Also, Fujita is quite silent as to feature (B) of the present invention.

Thus, Fujita does not teach or suggest the specific commingled polyester filament yarn as claimed in amended claim 1 of the present application, and the specific advantages of the commingled polyester filament yarn.

U.S. Patent 6,593,447 B1 (Yamamoto)

Yamamoto discloses a catalyst for polyester production. This catalyst is a reaction product of a Ti compound component with a phosphorus compound component to selected from a P compound of the formula (III):

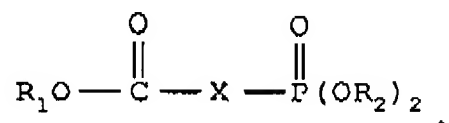


The phosphorus compounds of the formula (III) are phosphonic acids and phosphinic acids as shown in column 6, line 66 to column 7, line 51 of Yamamoto. Yamamoto does not describe a triethylphosphonoacetate represented by the formula (III) as recited in amended claim 1. Thus, the catalyst of Yamamoto is distinguishable from the specific catalyst used in the present invention as claimed in amended claim 1. As such, Yamamoto cannot teach or suggest feature (D) of the present invention.

Also, Yamamoto does not teach or suggest features (A) and (C) of the present invention. Therefore, Yamamoto does not teach or suggest the specific advantage due to the combination of features (A), (B) and (C).

U.S. Patent 4,254,018 (Kowallik)

Kowallik discloses a linear polyester polymer containing a heat stabilizing agent which is a phosphonate of the formula:



This type phosphate includes trimethylphosphonoacetate represented by the formula (III) in the amended claim 1 of the present application. However, Kowallik does not specifically disclose the phosphorus compound of the formula (III) as recited in amended claim 1. Also, in Examples 1 to 14 in Kowallik, the specific heat stabilizing agent is employed together with catalysts  $\text{Sb}_2\text{O}_3$  and  $\text{GeO}_2$ , but not a Ti compound.

Thus, Kowallik does not teach or suggest the feature (B) of the present invention. Also, Kowallik does not teach or suggest features (A) and (C) and the specific advantages of the present invention.

#### Combination of the Cited Prior Art References

None of the cited references teach or suggest features (B) and (C) of the present invention as recited in the amended claim 1.

Also, none of the cited references teach or suggest that the combination of features (A) and (B) with feature (C) enables the resultant commingled filament yarn to exhibit the specific advantages as discussed above with reference to the presently claimed invention.

Accordingly, no combination of the cited references with each other render the commingled polyester filament yarn as recited in the amended claim 1 of the present application obvious. Withdrawal of the rejection is respectfully requested.

#### **II. Response to the Non-obviousness Double Patenting Rejection**

Applicant respectfully requests that the provisional rejection claims 1-2 and 5-6 over claims 1 - 20 of co-pending Application No. 10/541,574, and claims 1 - 15 of co-pending Application No. 10/535,419 be held in abeyance until allowable subject matter has been indicated in one of the Applications.



Applicant submits herewith a Terminal Disclaimer to overcome the rejection of claims 1-2 and 5-6 over claims 1-2 of U.S. Patent 7,371,701 in view of U.S. Patent 6,818,282. Accordingly, Applicant requests that the rejection be withdrawn.

### III. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited.

If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned attorney at the local Washington, D.C. telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

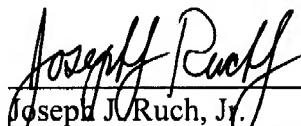
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CUSTOMER NUMBER

Date: December 1, 2008

  
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